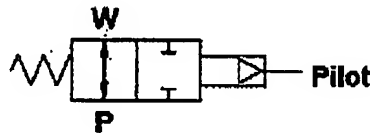


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REMARKS/ARGUMENTS

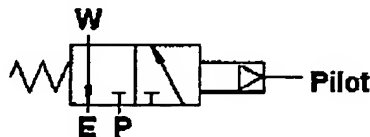
This Response is in reply to the Office Action mailed on April 7, 2006, wherein Claims 1-3, 5-8, and 14-22 were rejected by as obvious with respect to *Schumann* in view of *Edelman*. Applicants respectfully traverse the rejections of the claims for the following reasons.

As the Examiner has noted, *Edelman* discloses a pneumatic weapon that incorporates pressure reduction valves to fire a projectile from the barrel of the weapon. Because the primary function of the pneumatic weapon is to propel a projectile down the barrel, a simple on/off firing valve 130 is all that is required. A diagram of this valve is shown as follows:



When the valve is in its normal, closed position, both the pressure port and the work part are blocked. When pressure is applied to the pilot port, the valve shifts, allowing air to flow through the work port and down the barrel, propelling the projectile. Thus, this device has two ports.

Such a valve would not function in the design described in the pending claims. Rather, the valve as described includes three gates. Since the recoil cylinder is a closed system, a means of allowing the air to escape after valve actuation is required. A diagram of the recoil valve is shown as follows:



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When the valve is in its normal, position, the pressure port (P) is blocked, and the work (W) port is open to exhaust (E). When pressure is applied to the pilot port, the valve shifts, allowing air to flow from the pressure port, through the work port and into the spring biased cylinder, causing the cylinder to extend. When pilot pressure is removed, the valve returns to its normal position, causing the pressure port to be blocked, and connecting the work port to the exhaust port. The cylinder bias spring forces the cylinder to retract, and the air is allowed to escape through the exhaust port. Without a two-way valve, the cylinder would not be able to retract because the air would remain trapped in the cylinder.

Furthermore, the elements of Edelman that the Examiner cites as the three gates and distal and central cavities are not gates. In particular, the Examiner initially cites the O-rings 15c and 15b as gates for the recoil valve, but they are not gates at all. Thereafter, the Examiner cites a dividing wall 142, a plastic valve seat 180, and an axial plug 182 as gates of a valve, and further describes a piston cylinder 144 as the distal valve cavity. These elements cited by the Examiner do not act as valve gates or the distal valve cavity as defined in the claims and described in the Applicants' specification. The only components of Edelman that could be considered gates would be found in Figure 13 as the components that allow pressure to flow in and out of the tubular body 140. Thus, Edelman does not teach the elements of the claimed invention as asserted in the previous Office Action. Since neither Schuman nor Edelman describe the elements as claimed in the patent application, Applicants submit that the claimed invention is not obvious in view of the cited references.

Furthermore, as noted above, the valve Edelman and Schuman would not create a functioning device. The firing valve cited in Edelman would not operate with Schuman since

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there is no means of allowing the air to escape after valve actuation is required. Prima facie obviousness is not demonstrated if the combination of the substitution, combination or other modifications suggested by the Examiner is not supported by the references themselves because the references do not provide a reasonable expectation of success in making the substitution, combination or modification. In re O'Farrell, 7 U.S.P.Q.2d 1673, 1681 (Fed. Cir. 1988). Consequently, the present claims are not obvious.

In view of the foregoing, Applicants respectfully request favorable action at the Examiner's earliest convenience. Should any additional fees be necessary for a proper response, Applicant requests that Charge Account No. 02-4300 to Smith, Gambrell & Russell be charged for said fees.

Respectfully submitted,
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